

CLAIM AMENDMENTS

1. (Currently amended) Apparatus ~~{10}~~ for measuring the chromatic dispersion (CD) of an optical fibre ~~{50}~~ fiber, comprising:

- an optical source ~~{11}~~ able to generate optical signals at variable wavelength;
- a signal generator ~~{12}~~ able to generate modulation signals;
- a modulator ~~{19}~~ able to generate modulated optical signals on the basis of said optical signals and of said modulation signals;
- a coupler ~~{15}~~ able to send said modulated optical signals to a first end of said fiber: ~~fibre {50}: characterised in that~~
- said signal generator ~~{12}~~ comprises means able to generate impulsive electrical signals having variable amplitude, and duration and periodicity determined according to the characteristics of said fiber ~~fibre {50}~~;
- said ~~fibre {50}~~ fiber comprises in correspondence with a second end a reflecting element ~~{51}~~ able to reflect said modulated optical signals and to generate reflected optical signals having a

21 reflected modulation component; and by
22 - comparison means ~~{14, 16, 18}~~ associated to said first
23 end of said fiber fibre ~~{50}~~ and able to measure the phase
24 difference between said modulation signals and said reflected
25 modulation component.

1 2. (Currently amended) Apparatus ~~{10}~~ as claimed in
2 claim 1 characterised in that
3 - said coupler ~~{15}~~ comprises means able to receive said
4 reflected optical signals; and
5 - said comparison means ~~{14, 16}~~ comprises
6 - an optical receiver ~~{16}~~ connected to said coupler ~~{15}~~ and able
7 to convert said reflected optical signals into electrical signals
8 representative of said reflected modulation component; and
9 - a phase comparator ~~{14}~~ connected to said signal generator ~~{12}~~
10 and to said optical receiver ~~{16}~~ and able to generate an
11 electrical signal representative of said phase difference.

1 3. (Currently amended) Apparatus as claimed in claim 2,
2 further comprising 1 or 2 characterised by
3 - control means ~~{18}~~ associated respectively to said
4 optical source ~~{11}~~ and to said signal generator ~~{12}~~ and able

selectively to control the wavelength of said optical signals and the characteristics of said modulation signals.

4. (Currently amended) Apparatus as claimed in claim 3 ~~characterised in that~~ wherein said control means ~~{18}~~ comprise

- computing means (18) able to calculate the chromatic dispersion (CD) of said optical fibre (50) on the basis of the phase difference measured as the wavelength of said optical signal varies.

5. (Currently amended) Method for measuring the chromatic dispersion ~~{CD}~~ of an optical fiber ~~fibre~~ ~~{50}~~ ~~characterised by~~ comprising the steps of

- generating optical signals ~~{11}~~ at variable wavelength;
- generating modulation signals ~~{12}~~ shaped by impulse electrical signals having predetermined phase, variable amplitude, duration and periodicity determined according to the characteristics of said ~~fibre~~ fiber;
- modulating said optical signals ~~{19}~~ with said modulation signals;
- sending the optical signals modulated with said modulation signals to a first end of said ~~fibre~~ ~~{50}~~ fiber;

13 - reflecting at a second end of said fibre~~(51)~~ fiber said
14 modulated optical signals in such a way as to obtain reflected
15 optical signals having a reflected modulation component;
16 - measuring in correspondence with said first end the phase
17 difference between said modulation signal and said reflected
18 modulation component.

1 (Currently amended) G 6. Method as claimed in claim 5
2 characterised by the additional step of
3 - calculating ~~(18)~~ the chromatic dispersion ~~(CD)~~ of said
4 optical fibre~~(50)~~ on the basis of the phase difference measured as
5 said wavelength of said optical signals varies.